©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

Nyctemera pseudokala sp. nov. and *N. mastrigti* sp. nov., two new species from Indonesia (Lepidoptera: Arctiidae, Nyctemerinae)

Rob DE Vos

Drs. Rob DE Vos, Instituut voor Systematiek en Populatiebiologie, afd. Entomologie, Plantage Middenlaan 64, NL-1018 DH Amsterdam, The Netherlands

Abstract: Two new species of the Arctiid genus *Nyctemera* HÜBNER, [1820] are described. *Nyctemera* ***pseudokala*** **sp. nov.** from Buru is presumably closely related to *N. kala* (SWINHOE, 1892) from the Kai Islands, which is indicated by external characters and similarities in genitalia. *Nyctemera* ***mastrigti*** **sp. nov.** is found in the Central Mountains of Irian Jaya.

Nyctemera pseudokala **sp. nov. und *N. mastrigti* sp. nov., zwei neue Arten aus Indonesien (Lepidoptera: Arctiidae, Nyctemerinae)**

Zusammenfassung: Zwei neue Arten der Gattung *Nyctemera* HÜBNER [1820] werden beschrieben. *Nyctemera* ***pseudokala*** **sp. nov.** von der Insel Buru ist ähnlich *N. kala* (SWINHOE, 1892) von den Kai-Inseln und wird mit dieser verglichen. *Nyctemera* ***mastrigti*** **sp. nov.** wird aus den Zentralgebirgen von Irian Jaya (indonesischer Teil von Neuguinea) beschrieben. Falter und Genitalien beider Arten (sowie zum Vergleich auch von *N. kala*) werden abgebildet.

Nyctemera pseudokala **sp. nov. dan *N. mastrigti* sp. nov., dua species baru dari Indonesia (Lepidoptera: Arctiidae, Nyctemerinae)**

Ringkasan: Dibuat deskripsi dari dua species baru dari genus Arctiidae *Nyctemera* HÜBNER, [1820]. *Nyctemera* ***pseudokala*** **sp. nov.** dari Buru berhubungan erat dengan *Nyctemera kala* (SWINHOE, 1892) dari kepulauan Kai, yang diperlihatkan melalui ciri khas luar dan genitalia. *Nyctemera* ***mastrigti*** **sp. nov.** ditemukan di pegunungan sentral Irian Jaya.

Introduction

In connection with a revision of the genus *Nyctemera* HÜBNER, [1820], which is under preparation by the author, the genitalia of a long list of species and subspecies were checked. It became clear that many of the presently described "species" are in fact subspecies or (local) forms of widely distributed species. Nevertheless new species are still being discovered, hidden in museum collections, or recently collected, as is shown in this paper.

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

Two new species are described. *Nyctemera pseudokala* is only known from Buru by old museum specimens.

Only four specimens, one male and three females, are known of *Nyctemera mastrigti*. They were collected in very isolated areas in the Central Mountains of Irian Jaya.

The material examined is deposited in the following institutions and collections: Natural History Museum, London (formerly British Museum of Natural History) [BMNH], Nationaal Natuurhistorisch Museum, Leiden (formerly Rijksmuseum voor Natuurlijke Historie) [RMNH], and Zoölogisch Museum, Amsterdam [ZMA].

Nyctemera pseudokala sp. nov.

Nyctemera kala: VAN EECKE (1926: 349), nec SWINHOE (1892: 143).

Holotype: ♂, "Kako Tagalago, Central Buru, 2700 ft., v. 1922, C., F. & J. PRATT", [BMNH].

Paratypes: 2 ♂♂, "Kako Tagalago, Central Buru, 2700 ft., v. 1922, C., F. & J. PRATT" [BMNH]; 1 ♀, "Lek Soela, Coast, Buru, II.-III. 1922, C., F. & J. PRATT" [BMNH]; 1 ♂, "Buru, S. Coast, v. 1922, C., F. & J. PRATT" [BMNH]; 1 ♀, "Buru, Station 6 [= Wai Eno(ckey)], 1921, L. J. TOXOPEUS" [RMNH]; 1 ♂, "Buru, Station 7 [= Wai Eno(ckey)], 1921, L. J. TOXOPEUS" [RMNH]; 1 ♀, "Buru, Wai Enockey, IV. 1921, ESTHM. " [RMNH].

Description

Imago (Fig. 1). Length of forewing 24-25 mm. Head and thorax blackish-brown with yellow margins. Abdominal segments dark brown, edged with white. Penultimate segment edged with yellow, anal end yolk-yellow. Legs dark grey-brown. Bipectinate antennae black, in ♀ pectination a little shorter than in ♂.

Forewing dark brown. Transversal band of 5-6 white spots divided by dark brown veins: a very small spot between costa and cell, a large round spot at end of the cell, a large spot between veins 2 and 3 connected to a smaller one between veins 1 and 2, a small spot near the cell between veins 3 and 4 and sometimes an even smaller spot between veins 4 and 5. Inner and outer margins of transversal band practically parallel.

Hindwing white with broad (about 3-5 mm) dark brown margin, interrupted at base of dorsum. Costa of hindwing dark brown edged. Margin broader at vein 2, forming a remnant of the "*Nyctemera*-tooth" as seen in *N. baulus* (BOISDUVAL, 1832). Underside of fore- and hindwing

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

identical to upperside, though with remnant of the "*Nyctemera*-tooth" better visible.

Male genitalia (Figs. 5a-d). Uncus broad and flat, beak-shaped, with obscure keel. Vinculum with distinctly pointed saccus. Valva with three processes. Valva rather broad with small but well developed process on sacculus. Extension of sacculus slender and bent inwards, with distinct and sharp thorn at its base. Extension of cucullus, short, rather flat and broad, almost straight, with slightly bent blunt top. Setae on all processes, but mainly on the small process of sacculus and top of cucullus. Aedeagus almost straight, slightly bent. No cornuti.

Female genitalia (Figs. 6a-b). Apophysis anterior slender and of moderate length; apophysis posterior longer and very slender. Antrum (chitinous distal part of ductus bursae) long, flat and ending abruptly, curled for about 180°. Bursa copulatrix with one signum at the end of ductus bursae. Signum long and dentate on underside, broadening and nod at one third of its length.

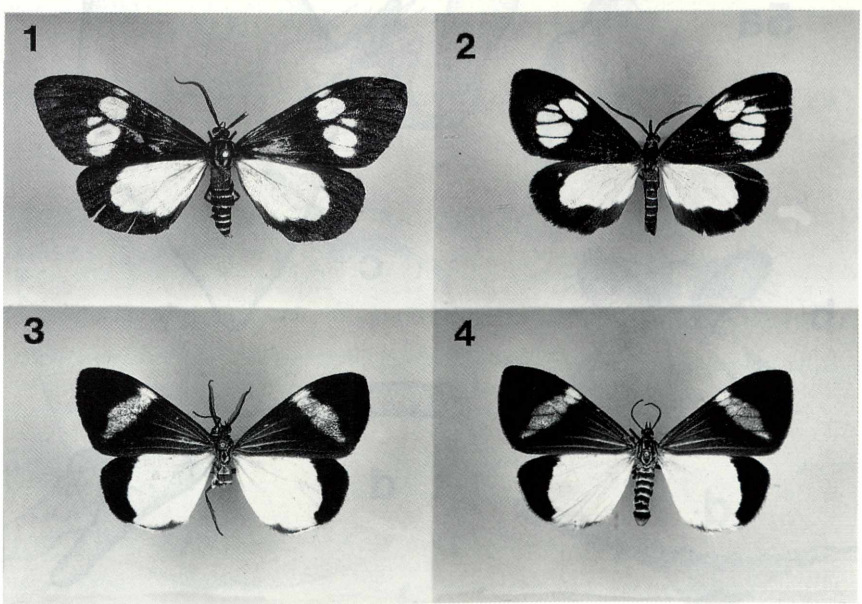


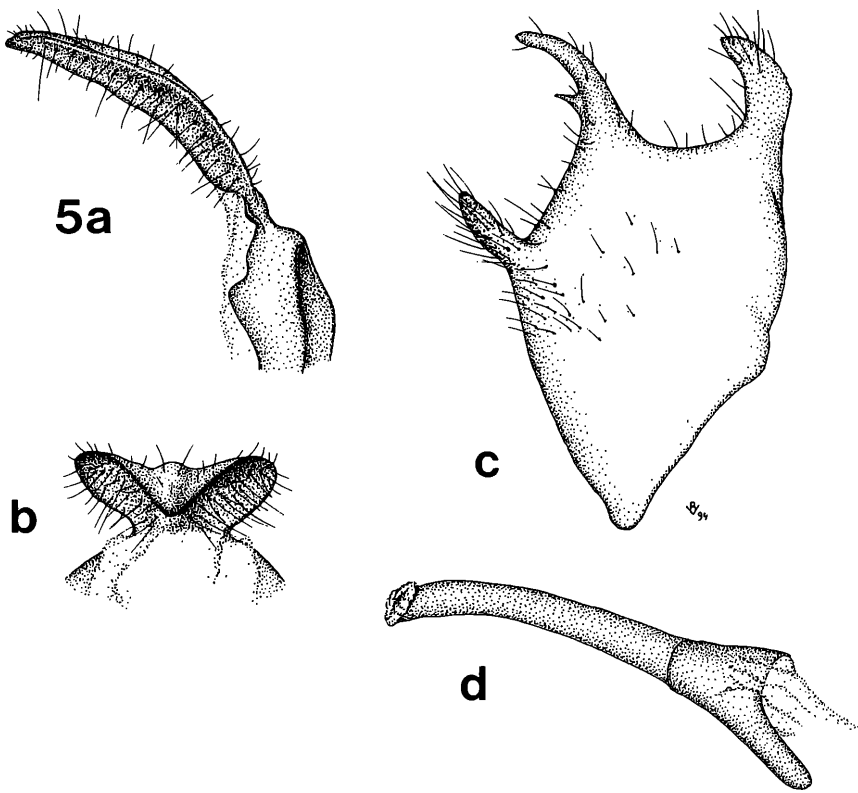
Fig. 1: *Nyctemera pseudokala* sp. nov. (Buru, Kako Tagalago, holotype). **Fig. 2:** *N. kala* (SWINHOE, 1892) (Kai Islands, Kai Besar). **Fig. 3:** *N. mastrigti* sp. nov. (Irian Jaya, Langda, holotype). **Fig. 4:** *N. mastrigti* sp. nov. (Irian Jaya, Welesi, paratype).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

Distribution (Fig. 9). *Nyctemera pseudokala* appears to be restricted to Buru island, Indonesia.

Etymology. The name *pseudokala* is chosen with respect of the similarity of wing pattern of this species (Fig. 1) with that of *N. kala* (SWINHOE, 1892) (Fig. 2), which already confused VAN EECKE (1926). It is to indicate the presumed close relationship between these two species.

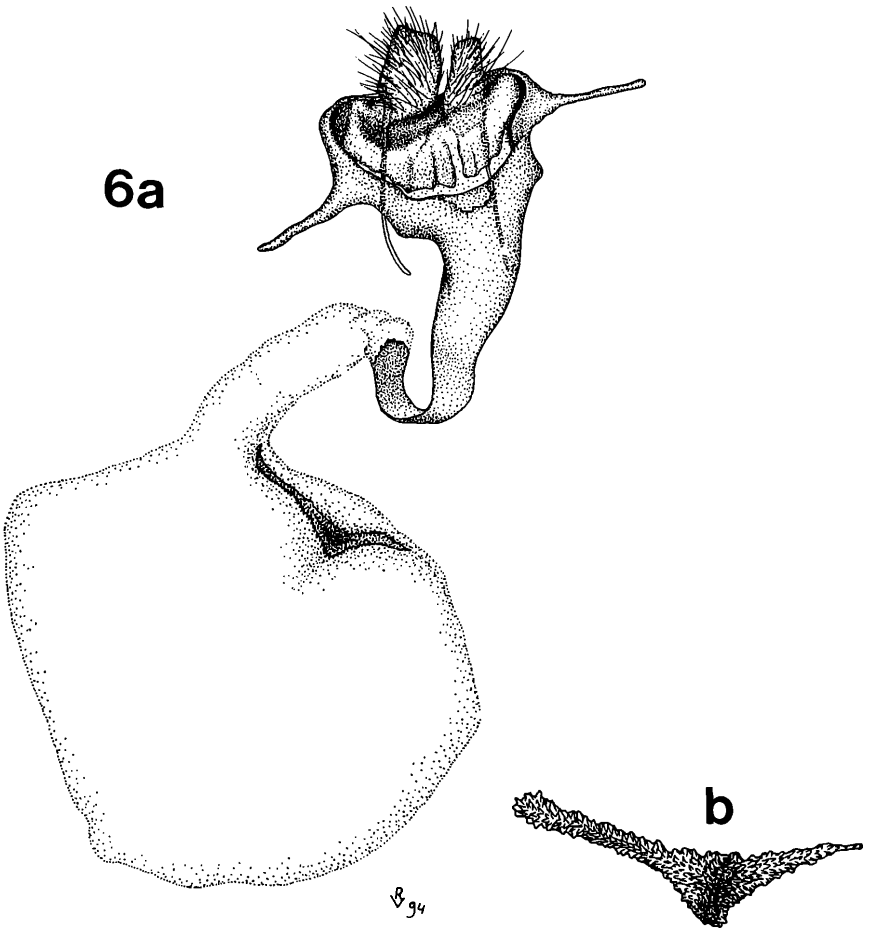
Remark. The relation between *Nyctemera pseudokala* and *N. kala* is very close, as indicated by the similarity of genitalia (Figs. 5a-d & 6a-b versus 7a-d & 8a-b). Males of *N. pseudokala* can be separated from *N. kala* by a



Figs. 5a–d: Male genitalia of *Nyctemera pseudokala* sp. nov. **Fig. 5a:** uncus, lateral view. **Fig. 5b:** uncus, ventral view. **Fig. 5c:** right valva, outer side. **Fig. 5d:** aedeagus (after prep. RV 301).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

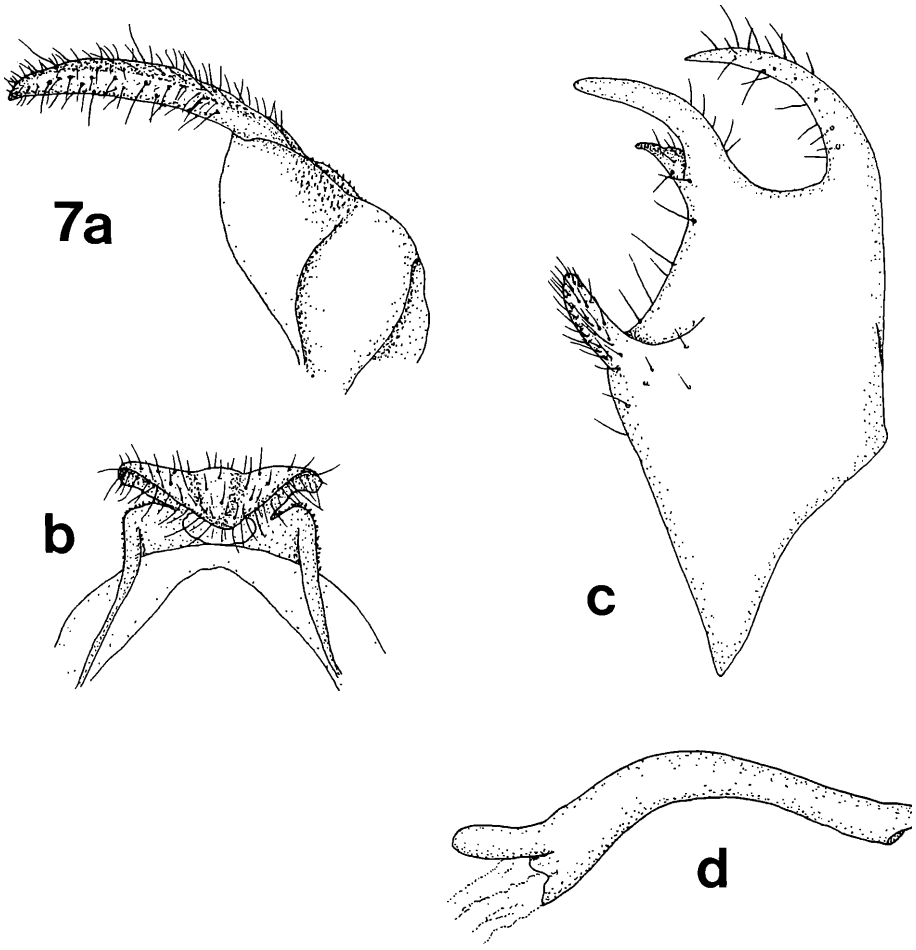
lesser flattened uncus (Fig. 5b versus 7b), broader valva (Fig. 5c versus 7c), shorter extension of sacculus with smaller thorn at its base (Fig. 5c versus 7c), distinct different shape of extension of cucullus which is shorter than extension of sacculus (Fig. 5c versus 7c), larger and almost straight aedeagus (Fig. 5d versus 7d). Female genitalia very similar in both species, though apophysis posterior longer (Fig. 6a versus 8a), antrum longer (Fig, 6a versus 8a) without chitinous dark central core in the apical end, like in *N. kala* (Fig. 8a), signum much longer (Fig. 6b



Figs. 6a–b: Female genitalia of *Nyctemera pseudokala* sp. nov. **Fig. 6a:** ventral view. **Fig. 6b:** signum, dorsolateral view (after prep. RV 305).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

versus 8b). *Nyctemera pseudokala* is distinctly larger than *kala* (length of forewing of *kala* about 21 mm). The most striking difference in wing pattern is the shape of the transversal band (Figs. 1 & 2), which is in *kala* much rounder at its outer margin, while inner margin in *kala* is more oblique than in *pseudokala*. The hindwings are about the same in both species. *Nyctemera kala* appears to be restricted to the Kai Islands (Maluku Tenggara), Indonesia.



Figs. 7a–d: Male genitalia of *Nyctemera kala* (SWINHOE, 1892). **Fig. 7a:** uncus, lateral view. **Fig. 7b:** uncus, ventral view. **Fig. 7c:** right valva, outer side. **Fig. 7d:** aedeagus (after prep. RV 292).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

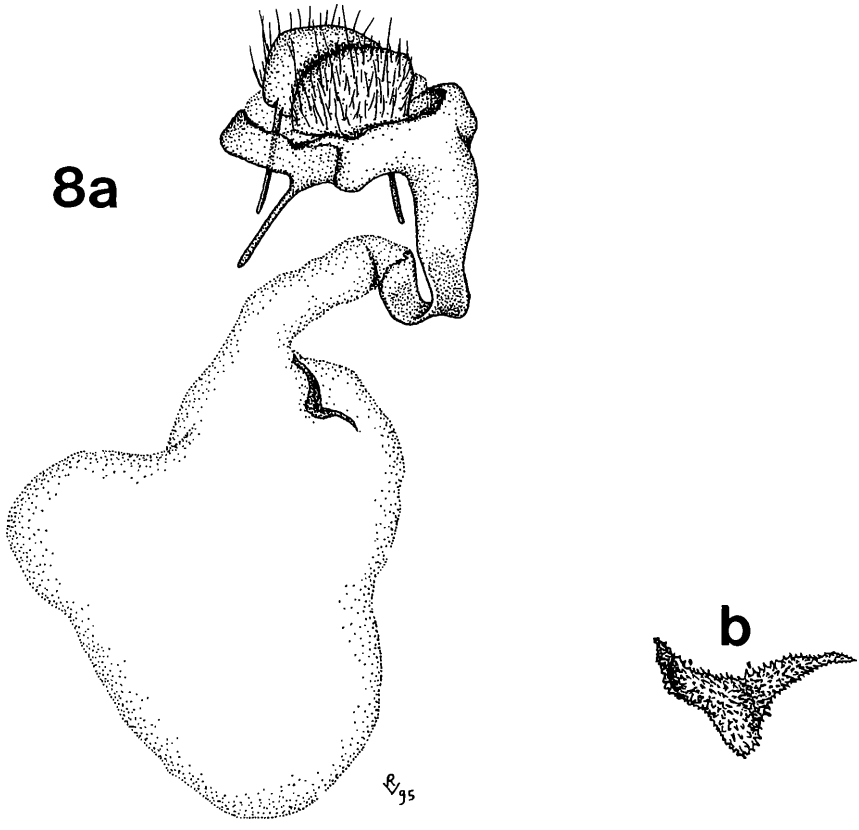
Nyctemera mastrigti sp. nov.

Holotype: ♂, "Indonesia, Irian Jaya, Langda, 1.-15. II. 1991, H. VAN MASTRIGT" [ZMA].

Paratypes: 1 ♀, "Indonesia, Irian Jaya, Welesi, Riv. Mil, 1950 m, 1. VII. 1988, H. VAN MASTRIGT" [ZMA]; 1 ♀, "Indonesia, Irian Jaya, Namunggun, near Ilaga, 2300 m, 18. v. 1988, H. VAN MASTRIGT" [ZMA]; 1 ♀, "Indonesia, Irian Jaya, Ilaga, 2150 m, 16.-19. v. 1988, H. VAN MASTRIGT" [ZMA].

Description

Imago (Figs. 3-4). Length of forewing 18-22 mm. Head rather small, black with yellow margins around eyes. Labial palpi short and erect, their



Figs. 8a–b: Female genitalia of *Nyctemera kala* (SWINHOE, 1892). **Fig. 8a:** ventral view. **Fig. 8b:** signum, dorsolateral view (after prep. RV 336).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

first segment with pale grey upperside and yellow underside, the second and third segment black. Thorax black; parts with white or pale yellow borders, ventral parts with white and yolk-yellow borders. Abdominal segments black, bordered white. Anal segment distally yolk-yellow. Legs dark grey-brown, inner side of legs more or less grey-white. Antennae black, bipectinate, in female shorter bipectinate than in male.

Forewing chocolate-brown. Transversal band oblique, reaching from costa to vein 2, not reaching tornus. White colour slightly sprinkled with dark brown scales, but hardly or not crossed by dark veins. Veins in basal field covered with white scales; fold between veins 1 and 2 with narrow white line.

Hindwing snow-white with broad black-brown margin from costa to vein 3. Margin sometimes continuing to dorsum in chocolate-brown line or band. Underside of fore- and hindwing identical to upperside, though darker brown coloured.

Variability. In two specimens the margin along hindwings continues in a narrow chocolate-brown line to dorsum (Figs. 3 & 4). In one specimen this line is lacking, while in another specimen the margin continues

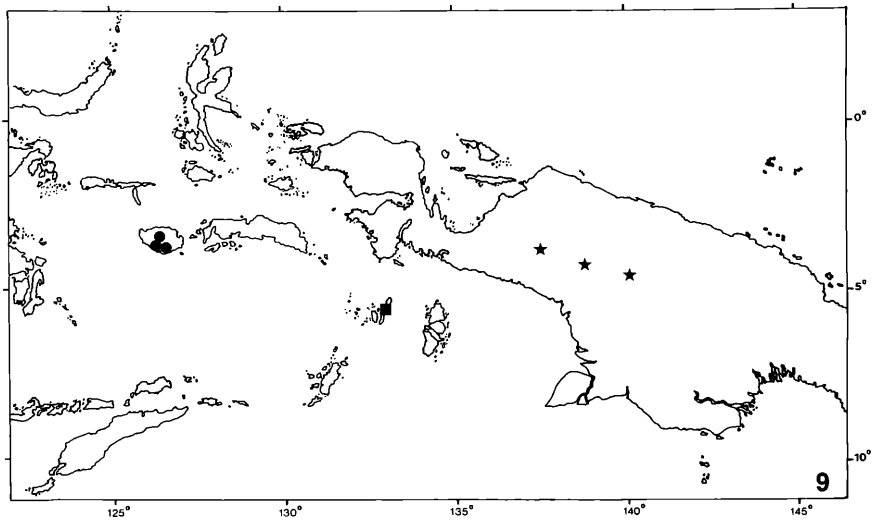
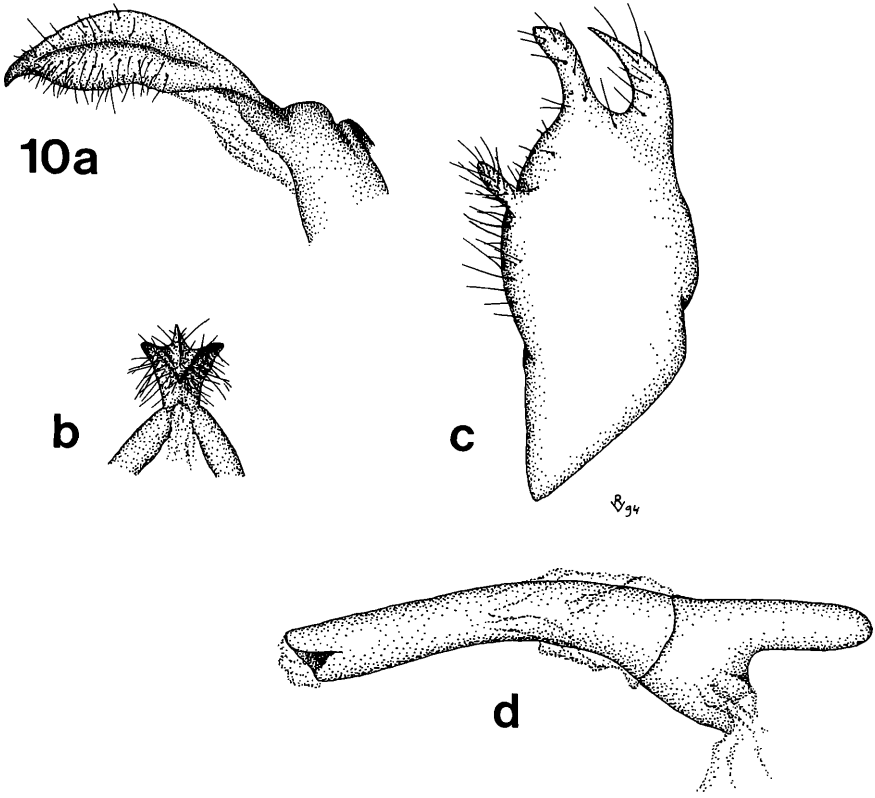


Fig. 9: Distribution of *Nyctemera pseudokala, N. kala* and *N. mastrigti*. ● *N. pseudokala;* ■ *N. kala;* ★ *N. mastrigti*.

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

chocolate-brown without narrowing. The female from Ilaga (2150 m) differs from the other specimens. Its forewing is dark brown without any dark scales in the transversal band, which is less broad and a little more oblique, and the black-brown margin on the hindwing is different, with an almost straight innerside, resembling the margin in *Nyctemera sumatrensis* HEYLAERTS, 1890 and in *N. apensis* SEMPER, 1899. The genitalia of this specimen, however, show no differences of importance with those of the other specimens, hence I consider this specimen to be a local form.

Male genitalia (Figs. 10a–d). Uncus arched with distinct sharp keel and pointed top. Keel extending over full length of uncus. Vinculum with

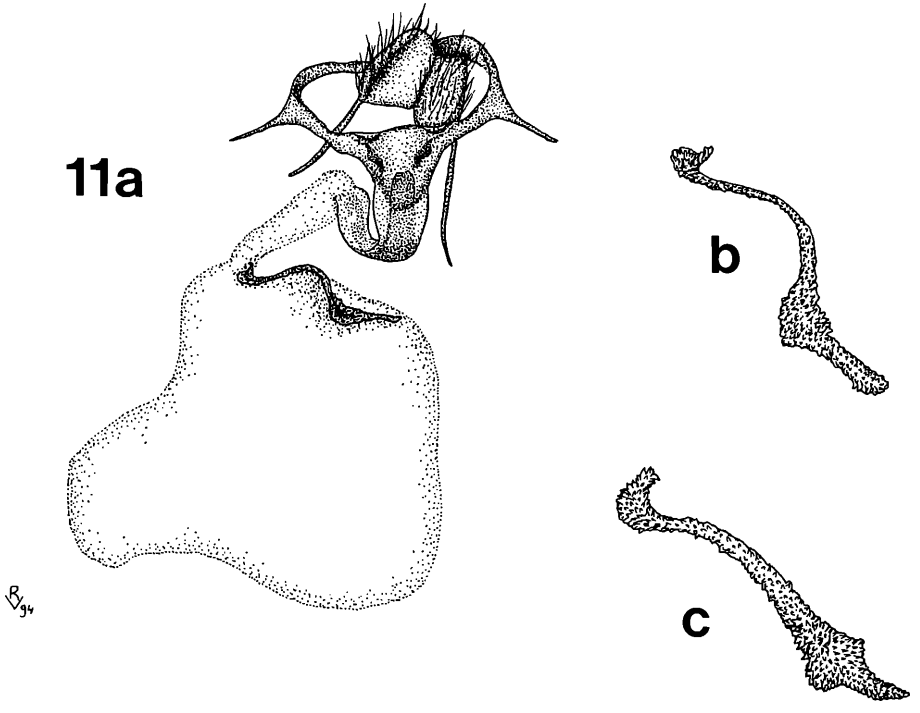


Figs. 10a–d: Male genitalia of *Nyctemera mastrigti* sp. nov. **Fig. 10a:** uncus, lateral view. **Fig. 10b:** uncus, ventral view. **Fig. 10c:** right valva, outer side. **Fig. 10d:** aedeagus (after prep. RV 302).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

distinct saccus, bent backwards. Valva slender, of "*baulus*-form", with three processes. Sacculus with well developed small process. Extension of sacculus short and compact, rather thick, without any thorn. Extension of cucullus flat with very sharp point, curved towards sacculus. Setae on sacculus and cucullus, most on sacculus. Aedeagus rather thick, almost straight but slightly bent. No cornuti.

Female genitalia (Figs. 11a-c). Apophysis anterior and posterior of moderate length. Antrum waved or curled and flat, slightly chitinous, but with more chitinous core. Bursa copulatrix with one signum. Signum long, slender and dentate on underside. Signum broadend and nod at about one fifth or one fourth of length, distally curled at side of ductus bursae. Some variation occurs in curling of antrum and location of nod in signum (Figs. 11b & c).



Figs. 11a-c: Female genitalia of *Nyctemera mastrigti* sp. nov. **Fig. 11a:** ventral view. **Fig. 11b:** signum, dorsolateral view (after prep. RV 304). **Fig. 11c:** signum, dorsolateral view (after prep. RV 303).

©Entomologischer Verein Apollo e.V. Frankfurt am Main; download unter www.zobodat.at

Distribution (Fig. 9). *Nyctemera mastrigti* is known from three sites in the Central Highlands (Maoke Mountains) of Irian Jaya. The known specimens were collected at an altitude of 1950 to 2300 meters.

Etymology. *Nyctemera mastrigti* is named in honour of Mr H. J. G. VAN MASTRIGT, who collected all available material of this species.

Acknowledgements

The author likes to thank Mr W. HOGENES of the Zoölogisch Museum in Amsterdam (ZMA), Dr R. DE JONG of the Nationaal Natuurhistorisch Museum in Leiden (RMNH), and Mr D. T. GOODGER of the Natural History Museum in London (BMNH) for allowing him to study material from their collections. Special thanks go to Mr H. J. G. VAN MASTRIGT who donated the specimens of *Nyctemera mastrigti* to the Zoölogisch Museum in Amsterdam. He also provided the Indonesian abstract. Finally I like to thank Dr A. J. DE BOER (Zaandam), Mr W. HOGENES (Amsterdam) and Mr K. ALDERS (Arnhem) for reading and commenting on the manuscript.

References

EECKE, R. VAN (1926): Fauna Buruana. Lepidoptera Heterocera, Fam. Zygaenidae, Syntomidae and Arctiidae. – Treubia 7: 341-350.

SWINHOE, C. (1892): Catalogue of eastern and Australian Lepidoptera Heterocera, part I, Sphinges and Bombyces. – Oxford (Clarendon Press), 324 pp.

Received: 12. VI. 1996

© Entomologischer Verein Apollo e. V., Frankfurt am Main, Oktober 1996 ISSN 0723-9912